

Claims:

1 . A method of transferring and dissolving a gas into a liquid by cavitation, comprising the steps of:

a.) providing a continuous cavitation generator comprising an elongate drive shaft having a first end and a second end, the first end being coupled to a selectively rotatable power source, the second end being coupled to a rod, tube, or column having a multifaceted, exterior circumference, said circumference comprising a series of high points;

b.) partially submerging the rod, tube or column in the receiving liquid;

c.)causing the rod, tube or column to rotate such that at appropriate angular velocities a cavitation zone is created behind each high point of the multifaceted exterior circumference such that the gas is drawn from the surface of the liquid into each cavitation zone; and

d.) the successive high point of each facet causes a zone of cavitation collapse thus creating micro bubbles which are projected outwardly and continuously into the surrounding receiving liquid.

2. The method in accordance with Claim 1, wherein the rotational speed, diameter and configuration of the circumference of the rod, tube or column cause vaporization of the receiving liquid along the interface of the cavitation zone and the liquid such that the micro bubbles created contain a vapor of the surrounding liquid to enhance dissolving action.

3. The method in accordance with Claim 1, wherein the rotational speed, diameter and configuration of the circumference of the rod, tube or column cause vaporization of the receiving liquid along the interface of the cavitation zone and the liquid such that the micro bubbles created contain a vapor of the surrounding liquid to remove volatile compounds or gases from the receiving liquid.

4. The method in accordance with Claim 1, wherein the rotational speed, diameter and configuration of the circumference of the rod, tube or column cause sufficient pressure and mechanical impact in the zones of cavitation collapse to enhance the breaking up and dissolving of solids and semi-solids in the receiving liquid or liquid.

5. An improved device for transferring and dissolving a gas to a liquid, comprising:

- a.)an elongated shaft having an upper end and a lower end;
- b.)means associated with the upper end of said shaft for rotating said shaft;
- c.)said shaft comprising a multifaceted exterior circumference, said exterior further comprising a series of high points,
- d.)said shaft being partially submerged in the liquid;
- e.)a cavitation zone is created behind each high point when the shaft is rotated;
- f.)gas is drawn into each cavitation zone;
- g.) zone of cavitation collapse is created immediately following each high point creating micro bubbles under sufficient pressure to expel the micro bubbles outward into the surrounding liquid causing the dissolving of the gas into the liquid.

6. The device of claim 5 wherein the liquid is water.

7. The device of claim 5 wherein the gas is air.

8. The device of claim 5 wherein the gas is oxygen.
9. The device of claim 5 wherein the liquid is water and the gas is air.
10. The device of claim 5 wherein the liquid is water and the gas is oxygen.
11. A method of creating an open cylindrical gas filled cavity in a liquid to transfer the gas to the liquid comprising a spinning stack of fans, a helical configuration or an irregular cylindrical surface driven by a shaft attached to a suitable rotational power source such that the gas flows down from the surface of the liquid and outward to the surface of the cylindrical cavity where cavitation effects at the gas-liquid interface cause massive amounts of micro bubbles to be expelled radially into the liquid.